Amendments to the Specification:

~~At page 4 through page 5,~~ please substitute the following paragraphs.

The file of this patent contains at least one drawing executed in color. Copies of this patent with color drawings are provided to the Patent and Trademark Office with payment of the necessary fee.

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[Figure 1] FIG. 1A-1C. Isolation of Mag-4 peptides that specifically associate with N-NR1. FIG. 1A. Amino acid sequence alignment. Two phage clones, Mag-4.1 and Mag-4.2, specifically association with N-NR1 were isolated by panning selection (see Experimental Protocols). The amino acid sequence was deduced and aligned. FIG. 1B Binding specificity of Mag-4.1 peptides to the H2-terminal domain of glutamate receptor. Phage ELISA experiments were carried out using N-NR1, N-NR1.spl, and N-GluR1. Experimental procedures were described in Experimental Protocols. The dash bars indicate wells coated with bovine serum albumin (BSA) only, white bars: BSA plus mAb8610; black bars: BSA, mAb8610 plus the captured fusion proteins for N-NR1, N-NR1.spl, or N-GluR1 (as indicated). Experiments were carried out in triplicate. Error bars indicate the SD FIG. 1C Inhibition of Mag-4.1 phage binding by synthegtic Mag-4.1 peptide. The ability of synthetic HPLC-purified Mag-4.1 peptide (GGGLNDWFITYIGGG) (SEQ ID NO:4) to compete with the Mag-4.1 phage binding to N-NR1 fusion protein was determined by phage ELISA The vertical axis indicates the relative binding comparing to the signal obtained without adding the peptide inhibitors. The horizontal axis indicates concentration of the peptides added in mM (as indicated).

FIG. 2. Specific detection of N-NR1 protein by phage-overlay. Crude extracts containing fusion proteins of N-NR1 and N-NR2A at 1:5 ratio were fractionated on SDS-PAGE and transferred onto a nitrocellulose filter. The immobilized proteins were subjected to a denaturation-renaturation procedures (see Experimental Protocol). The renatured protein were detected by either monoclonal antibody 8610 (mAb8610) left panel) or Mag-4.1 phage (right panel). Lanes 1, 2, 3 and 4 contain decreasing amounts of N-NR1 fusion protein (100 ng, 20 ng, 4 ng, and 0.8 ng).

[Figure 3] FIGS. 3A-3B. Phage-immunostain detection of N-NR1 protein on cell surface. Two

CHO cell lines expressing low (~10^4 copies per cell) and high (~10^6 copies per cells) of N-NR1 fusion protein were mixed by 1:1 ratio and allowed to grow on gelatin-coated cover glass. The mixed cells were incubated with Mag-4.1 phage in the presence FIG. 3A or absence FIG. 3B of 500 mM of synthetic Mag-4.1 peptide. The Mag-4.1 phage binding was detected by rabbit-anti-phage antibody (see Experimental Protocol).

[Figure 4] FIGS. 4A-4C. Double stain of N-NR1 protein by mAb8610 and Mag-4.1 phage. N-NR1 positive and N-NR1 negative cells were mixed at ratio 1:1 and allowed to grow on gelatin-coated cover glass. The live cells were first incubated with Mag-4.1 phage. After fixation, the cells were incubated with mAb8610 (mouse) specific to the epitope on fusion protein and anti-phage antibody (rabbit). The antibody binding was then detected by goat-anti-mouse (Texas-red) and goat-anti-rabbit (fluorescein, green). A same area of cells were visualized by (FIG. 4A) Nomaski, (FIG. 4B) mAb8610; and (FIG. 4C) Mag-4.1.

[Figure 5] FIGS. 5A-5E. Detection of the N-NR1 protein by FACS. CHO cells were stained with Mag-4.1 phage followed by rabbit anti-phage antibody and fluorescein-labeled secondary antibody (see FIG. 4 legend and Experimental Protocol). Vertical axis is relative cell number, horizontal axis is relative intensity of green fluorescence. (FIG. 5A) CHO cells; (FIG. 5B) CHO cells expressing low level of N-NR1 protein; (FIG. 5C) same as B, but stained in the presence of 500 mM of Mag-4.1 peptide; (FIG. 5D) a 1:1 mixture of CHO cells expressing high and low levels of N-NR1 protein; (FIG. 5E) same as FIG. 5D, but in the presence 500 mM of Mag-4.1 peptide.

[Figure 6] FIGS. 6A and 6B. Detection of functional NMDA receptor by Mag-4.1 phage. HEK cells were cotransfected with plasmids expressing NR1 and NR2A cDNAs to form functional NMDA receptor channels (Li et al., 1996). At 48 hours after transfection, the cells were subjected to phage-immunostain using Mag-4.1 . The phage binding was visualized by HPR-conjugated antibody (see Experimental Protocol). Same area of stained cells was shown in low magnification (FIG. 6A [top panel) or high magnification (FIG. 6B [bottom panel]).